Listing of Claims

1. (Currently amended) A method for suppressing oscillation in a signal identified as or suspected of containing an oscillation, the method comprising~~ the following steps~~:

converting the signal into frequency bands in the frequency domain;

applying, for a selected period of time, a randomly changing phase to the signal in at least one of said frequency bands; and

reconverting the converted signal into an output waveform signal.

2. (Original) The method of claim 1, wherein said selected period is divided into a series of successive time windows, and for each successive time window a newly generated random or pseudo-random phase is applied to the signal.

3. (Currently amended) The method of claim 1~~ or 2~~, in combination with a method for detecting oscillation due to feedback in said signal in each of said frequency bands, a randomly changing phase applied in each frequency band for which said oscillation has been detected.

4. (Original) The method of claim 3, wherein the randomly changing phase is applied in each frequency band to a gain value to be applied to the signal.

5. (Currently amended) The method of claim 3~~ or 4~~, in which the oscillation detection technique comprises calculating, for each frequency band, the change in signal phase and/or signal amplitude from a time window to a subsequent time window, and comparing, for some or all of said frequency bands, the results of the calculation ~~step~~ to defined criteria to provide a measure of whether oscillation due to feedback is present in the signal.

6. (Currently amended) The method of claims 3~~ or 4~~, in which the oscillation detection technique is a phase locked loop method.

7. (Currently amended) The method of claim 3~~ or 4~~, in which the oscillation detection technique includes detection of a large sustained amplitude in a particular frequency band.

8. (Currently amended) The method of claim 2~~ or any one of claims 3 to 7 insofar as dependent on claim 2~~, including~~ the step of~~, for a particular frequency band, generating a complex number with random or pseudo-random phase and amplitude 1.0 for each successive time window, and applying this complex number to the signal in that frequency band.

9. (Original) The method of claim 8, in which a real gain value for said frequency band is multiplied by said complex number before the gain is applied to the signal.

10. (Currently amended) The method of claim 2~~ or any one of claims 3 to 7 insofar as dependent on claim 2~~, including~~ the step of~~, for a particular frequency band and in each successive time window, replacing the signal or signal gain with a signal or signal gain having equal amplitude and a random or pseudo-random phase.

11. (Original) An apparatus for suppressing oscillations in a signal identified as or suspected of containing an oscillation, comprising:

means for converting the signal into frequency bands in the frequency domain;

means for applying, for a selected period of time, a randomly changing phase to the signal in at least one of said frequency bands; and

means for reconverting the converted signal into an output waveform signal.

12. (Original) The apparatus of claim 11, including means for dividing the signal into a series of successive time windows, and means for applying to the signal, for each successive time window, a newly generated random or pseudo-random phase.

13. (Currently amended) The apparatus of claim 11~~ or 12~~, in combination with a means for detecting oscillation due to feedback in said signal in each of said frequency bands, the means for applying arranged to apply a random phase in each frequency band for which said oscillation has been detected.

14. (Currently amended) The apparatus of claim 13, in which the means for detecting oscillation comprises means for calculating, for each frequency band, the change in signal phase and/or signal amplitude from a time window to the next, and means for comparing, for some or all of said frequency bands, the results of the calculation ~~step~~ to defined criteria to provide a measure of whether oscillation due to feedback is present in the signal.

15. (Currently amended) The apparatus of ~~any one of~~ claims 11~~ to 14~~, wherein the means for applying are arranged to apply the randomly changing phase in each frequency band to a gain value to be applied to the signal.

16. (Original) The apparatus of claim 13, in which the means for oscillation detection comprises phase locked loop circuitry.

17. (Original) The apparatus of claim 13, in which the means for oscillation detection comprises means for detection of a large sustained amplitude in a particular frequency band.

18. (Currently Amended) The apparatus of ~~any one of claims~~claim 13 ~~to 17 insofar as dependent on claim 12~~, including including means for dividing the signal into a series of successive time windows, and means for applying to the signal, for each successive time window, a newly generated random or pseudo-random phase, and means for generating a complex number with random or pseudo-random phase and amplitude 1.0 for each successive time window, and means for applying this complex number to the signal in that frequency band.

19. (Original) The apparatus of claim 18, including means for multiplying a real gain value for said frequency band by said complex number before applying the gain to the signal.

20. (Currently amended) The apparatus of ~~any one of claims~~claim 13 ~~to 17 insofar as dependent on claim 12~~, including including means for dividing the signal into a series of successive time windows, and means for applying to the signal, for each successive time window, a newly generated random or pseudo-random phase, and means for, for a particular frequency band and in each successive time window, replacing the signal or signal gain with a signal or signal gain having a random or pseudo-random phase.